

2. On an apparently new Species of *Hyracodontotherium*¹.

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In 1877 Dr. H. Filhol² described and figured the left half of the palate of a comparatively small Ungulate under the name of *Hyracodontotherium*³ *primævum*, the specimen having been obtained from the Upper Eocene (Lower Oligocene) Phosphorites of Central France. This specimen showed the typical Eutherian dental formula, the last two incisors and the third and fourth premolars being, however, represented only by their alveoli. The chief features connected with the dentition are, firstly, that the incisors are placed nearly in the same antero-posterior line, after the fashion of those of a Pig, and that the first incisor is a comparatively large tooth, much curved, and with a convex anterior and a flattened posterior surface. This tooth presents, indeed, a decided resemblance to that of *Hyrax*. There is no diastema behind the third incisor, and the canine is a small trenchant tooth, not unlike the last incisor. The anterior premolars have elongated, subtrenchant crowns, while the alveolus of the fourth premolar indicates the crown of that tooth to have been triangular and of simpler structure than the true molars. The latter are of a lophodont type, recalling those of the Perissodactylate genus *Chalicotherium*.

In his description Dr. Filhol made no attempt to determine the serial position of this peculiar genus, merely remarking that it appeared to show certain resemblances to *Anoplotherium* and *Hyrax*. In 1886 Dr. M. Schlosser⁴ stated that *Hyracodontotherium* was evidently closely allied to the N.-American Eocene genus *Meniscotherium*, and inclined to the opinion that both were allied to *Chalicotherium*, although the entepicondylar foramen in the humerus of the American genus indicated affinity with the typical Condylarthra of Prof. Cope. By the latter writer⁵ *Meniscotherium* is indeed made the type of a family of Condylarthra characterized by its specialized lophodont dentition.

So far as I am aware the above constitutes the literature of *Hyracodontotherium*.

HYRACODONTOTHERIUM FILHOLI, n. sp.

During last year the Natural History Museum acquired by purchase the specimen represented in the accompanying figure (p. 68), which was obtained from the Phosphorites of Bach, near Lalbenque, Lot, and evidently belongs to *Hyracodontotherium*. The specimen comprises a considerable part of the left half of the palato-facial region

¹ The name was published as *Hyracodonttherium*, which should clearly be amended as above.

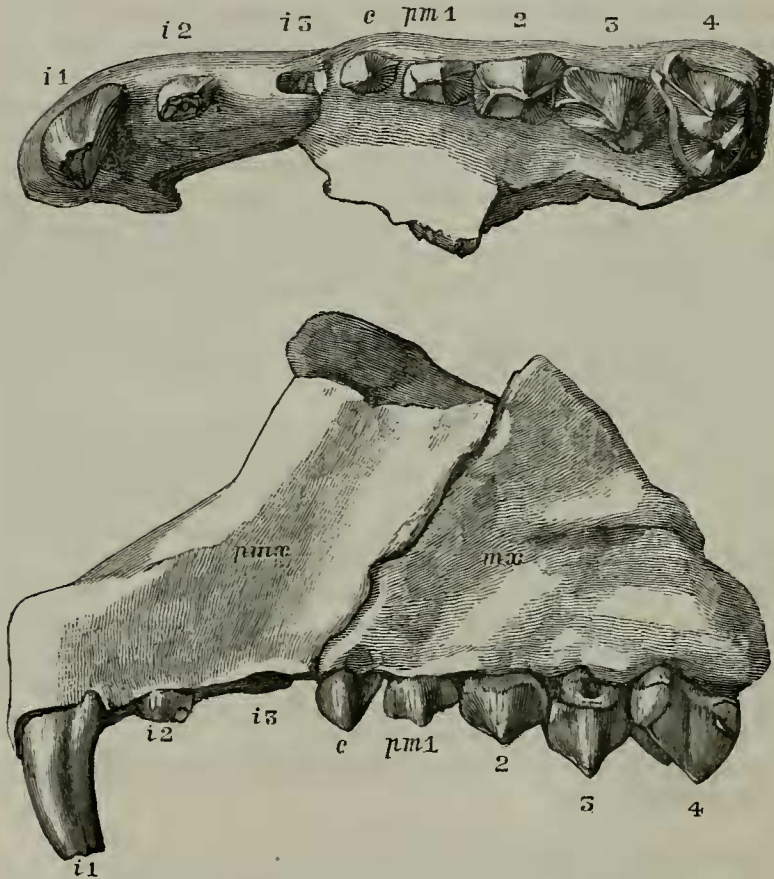
² Ann. Sci. Géol. vol. viii. art. 1, p. 153, pl. xiii. figs. 283, 284.

³ The plate is erroneously lettered *Hyracodon*.

⁴ Morphol. Jahrb. vol. xii. p. 21.

⁵ Rep. U.S. Geol. Surv. Terr. vol. iv. p. 493 (1884).

of the cranium, showing the boundary of the nares, the whole of the premaxilla (of which the upper extremity is fractured and bent), and the anterior portion of the maxilla. The true molars are unfortunately wanting, but, with the exception of the third incisor, all the other teeth are preserved, although the summits of the crowns of the two remaining incisors are broken off. The position of the third incisor is indicated by its alveolus, and the suture between the maxilla and premaxilla clearly shown, both in the lateral and palatal aspects.



Hyracodontotherium filholi; from the Phosphorites of Central France. Palatal and lateral aspects of the anterior portion of the cranium, nat. size.

pmx., premaxilla; *mx.*, maxilla.

On comparison with the figure of *H. primævum* very striking differences are exhibited by the present specimen, which indicates a larger animal. Thus, whereas the canine is nearly similar in the two specimens, the first incisor of the latter is very much larger, and the nasal aperture is likewise of much greater extent; but whereas

in the former the space occupied by the four premolars exceeds that between the canine and the anterior border of the first incisor by the whole width of the latter, in the present specimen the first of these dimensions only slightly exceeds the second. Again, whereas in the type species the first premolar is not longer (antero-posteriorly) than the canine, and is much shorter than pm. 3, in the present specimen the length of pm. 2 is much greater than that of the canine, and its difference from that of pm. 3 less than in the type. Further, there is a larger interval between i. 2 and i. 3 in the specimen under consideration.

These differences are indicated by the following measurements :—

	<i>H. primævum.</i>	<i>H. filholi.</i>
Ant.-post. diam. of <u>i. 1</u>	0,006	0,011
Transverse „ „	0,006	0,010
Ant.-post. diam. of canine	0,007	0,008
„ „ <u>pm. 1</u>	0,007 ¹	0,0095
„ „ <u>pm. 2</u>	0,009 ¹	0,010
Length of space occupied by premolars ..	0,030	0,039
Interval between canine and anterior border of <u>i. 1</u>	0,022	0,035
Length of outer narial border	0,023	0,038
Interval between <u>i. 2</u> and <u>i. 3</u>	0,003	0,007

There is of course the possibility of these differences being sexual rather than specific, in which case the present specimen would be the male, and the increase in the first incisor would be analogous to that of the canine in the male Fig. In the absence, however, of any known instance, except in the case of the Elephant, of such a difference in the incisors of the two sexes, I am disposed, at least provisionally, to regard the present specimen as indicating a second species of the genus, which may be known by the name of *H. filholi*.

The present specimen is important as showing that pm. 4 differs from that of *Meniscotherium* in having only a single outer lobe.

Whether the resemblance of the anterior portion of the skull of *Hyracodontotherium* to *Hyrax* indicates a genetic relationship between the two forms, the evidence at present available is insufficient to decide. It is, however, significant that both the Hyracoidea and the Condylarthra have such a similar type of carpus and tarsus that they are bracketed together by Prof. Cope in a single group. It may be added that the presence of an entepicondylar foramen in the humerus of *Meniscotherium* is in favour of Cope's reference of that genus to the Condylarthra rather than to the Perissodactyla.

Finally, I have to thank Dr. H. Woodward for permission to bring the specimen forming the subject of this communication under the notice of the Society.

¹ These dimensions are taken from Dr. Filhol's figure, and differ somewhat from those given in the text.